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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YU DENG, HARUMI A. KUNO, and KEVIN L. SMATHERS

Appeal 2010-003485
Application 10/797,266
Technology Center 2100

Before LANCE LEONARD BARRY, JEAN R. HOMERE,
and THU A. DANG, *Administrative Patent Judges*.

DANG, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 11-20 (App. Br. 2). Claims 1-10 and 21-25 have been withdrawn (*id.*). We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

A. INVENTION

Appellants' invention is directed to a method and system comprising a processor and a storage unit that contains elements of metadata belonging to a plurality of schemas which map relationships between each element; wherein, the relationships may be functional expressions executable by the processor (Abstract).

B. ILLUSTRATIVE CLAIM

Claim 11 is exemplary:

> 11. A method performed by at least one processor, the method comprising:
>
> generating a node to represent a functional relationship between one or more objects of distinct ontologies in a metadata system;
>
> associating a metadata expression of the functional relationship to the node; and
>
> associating one or more parameters of the functional relationship to the node.

C. REJECTION

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Ardoin	US 5,692,184	Nov. 25, 1997
Cui	WO 03/030025 A1	Apr. 10, 2003

Bonatti et al, "An Ontology-Extended Relational Algebra," IEEE Conference on Information Reuse and Integration, 192-199 (2003).

W3C, Resource Description Framework (RDF): Concepts and Abstract Syntax (2003).

Claims 11, 12, and 15-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cui in view of Ardoin and Bonatti.

Claims 13, 14, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cui in view of Ardoin, Bonatti, and W3C.

II. ISSUE

The dispositive issue before us is whether the Examiner has erred in determining that the combination of Cui, Ardoin, and Bonatti teaches or would have suggested "generating a node to represent a functional relationship between one or more objects of *distinct ontologies* in a metadata system" and "*associating a metadata expression* of the functional relationship *to the node*" (claim 11, emphasis added).

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellants, each ontology represents a metadata schema having a vocabulary of terms which may be processed by processors 106 and 108 (Spec. ¶ [0018]).

Cui

2. Cui discloses a database management system having a mapping server 22 for heterogeneous information integration; wherein, node and link representations are used to associate values from different resources to address problems of semantic mismatch (of different ontologies) (Figs. 1 and 9; Abstract; p. 1, ll. 1-11 and p. 6, ll. 8-10).

3. The mapping server 22 stores mappings between resource ontology and application/user ontology and stores generic conversion functions which can be used to define a mapping from one ontology to another (p. 6, ll. 8-10; p. 10, ll. 17-20). In particular, the system includes a library of mappings and conversion functions for many standard translations, i.e. converting kilos to pounds (p. 9, ll. 12-15).

4. The system serves as a mediator that is capable of interpreting the mappings in order to translate between different ontologies (p. 9, ll. 12-15).

Ardoin

5. Ardoin discloses a method for maintaining relationships between entities in a computer system, each entity having a plurality of nodes (Abstract).

6. There are two types of nodes disclosed: value nodes and associative function nodes; wherein, value nodes represent a repository having a value (input, output or a constrained argument of a predicate) and an associative function node establishes dependency relations between value nodes (col. 6, ll. 38-65).

Bonatti

7. Bonatti discloses a method and system for integration of data at the semantic level between relational databases of differing ontologies; wherein, an ontology extended relation (including a relation) that conveys semantic meaning about the terms is used in a hierarchical/nodal mapping of the terms (Fig. 1; Abstract; Sec. 3). In particular, where two different databases having part information, one in US dollars and one in Euros, a conversion function (Euro2Currency) is used to convert one currency (US dollars) to another currency (Euros) (Sec. 2.1, paras. 1-2; Sec. 4, paras. 12-13).

IV. ANALYSIS

Claim 11, 12, and 16-19

As to claim 11, Appellants contend that neither Ardoin nor Bonatti disclose "associating a metadata expression of the functional relationship (between one or more objects of **distinct ontologies**) to a node that represents the functional relationship" (App. Br. 5). Appellants argue that "no reason existed that would have prompted a person of ordinary skill in the art to combine the teachings of Cui, Ardoin, and Bonatti" since "Cui discloses a mapping server that stores mappings between **ontologies**;" "[t]here is no teaching in Cui of functional relationships between one or more objects of distinct ontologies;" and "Ardoin relates to defining relations between nodes within just a single ontology" (App. Br. 6). Appellants finally contend that "modifying Cui with the teachings of Bonatti would have resulted in a significant change in the principle of operation of the Cui system" (*id.*).

However, the Examiner finds that Appellants appear to be "attacking references individually where the rejections are based on combinations of references," since "Ardoin is not the primary reference" and Cui discloses that "that the system stores mappings between ontologies" (Ans. 9). The Examiner notes that although "[t]he Cui reference did not explicitly teach that the mappings included nodes or that the conversion functions (i.e. the functional relationship) are associated with a node," "Ardoin teaches the usage of a variety of nodes to represent a map of the relationship from one node to another node" (Ans. 9-10). The Examiner notes that "The Oxford English Dictionary defines 'distinct' as … '[s]eparate or apart so as to be capable of being distinguished, **or as being different**; not confounded with each other, or with something else'" (Ans. 10). Since "Bonatti teaches 'integrating different ontologies,'" "Bonatti teaches distinct ontologies" (Ans. 11).

We give the claim its broadest reasonable interpretation consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). However, we will not read limitations from the Specification into the claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

Claim 11 does not place any limitation on what "distinct ontologies" means, includes, or represents. As noted *supra*, "distinct" means "'[s]eparate or apart so as to be capable of being distinguished, or as being different; not confounded with each other, or with something else'" (Ans. 10, emphasis removed). Furthermore, the Specification discloses that each ontology represents a metadata schema having a vocabulary of terms capable of being processed (FF 1). Thus, we give "distinct ontologies" its broadest reasonable interpretation as differing metadata schema, each having

differing vocabularies of terms, as consistent with the Specification and as specifically defined in claim 11.

Cui discloses a database management system having a mapping server for heterogeneous information integration; wherein, node and link representations are used to associate values from different resources to address problems of semantic mismatch for different ontologies (FF 2 and 4). The system includes a library of mappings (between resource ontology and application/user ontology) and conversion functions for many standard translations (FF 3). We find that the node and link representations including conversion functions comprise generating a node that defines functional relationships between objects of different ontologies. That is, we find that "generating a node to represent a functional relationship between one or more objects of distinct ontologies in a metadata system" (claim 11) reads on Cui's node and link representations.

In addition, Ardoin discloses a method for maintaining relationships between entities having a plurality of nodes (FF 5). The value nodes represent a repository having a value, and the associative function node establishes dependency relations between value nodes (FF 6). We find that the associative node comprises associating an expression to the node and that it represents a functional relationship between value nodes. That is, we find that "associating a metadata expression of the functional relationship to the node" (claim 11) reads on Ardoin's associative function node.

Furthermore, Bonatti discloses a method and system for integration of data at the semantic level between relational databases of differing ontologies; wherein, when the databases have data of different currencies, a conversion function is associated with the data (FF 7). We find that the

conversion function defines functional relationships between objects of different ontologies and that it associates an expression with the node. Therefore, we also find that "associating a metadata expression of the functional relationship to the node" (claim 11) reads on Bonatti's conversion function.

Though Appellants also contend that "modifying Cui with the teachings of Bonatti would have resulted in a significant change in the principle of operation of the Cui system" (App. Br. 6), Appellants have not provided support for this assertion.

Since Cui discloses a mapping server that generates node and link representations that associate data from different ontologies, we conclude that the combination of one known element (Cui's mapping server) with another (Ardoin's associative function node or Bonatti's currency function) would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Thus, we find that generating a node representing a functional relationship between objects of differing ontologies as taught by Cui in addition to Ardoin's associative function node or Bonatti's currency function is no more than a simple arrangement of old elements, with each performing the same function it had been known to perform, yielding no more than one would expect from such an arrangement. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

The skilled artisan would "be able to fit the teachings of multiple patents together like pieces of a puzzle" since the skilled artisan is "a person of ordinary creativity, not an automaton." *Id.* at 420-21. Appellants have presented no evidence that combining Cui's mapping server with the currency function of Bonatti's was "uniquely challenging or difficult for one

of ordinary skill in the art" or "represented an unobvious step over the prior art." *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 418-19).

Accordingly, we find that Appellants have not shown that the Examiner erred in rejecting representative claim 11 under 35 U.S.C. § 103(a) over Cui in view of Ardoin and Bonatti. Similarly, independent claim 18, having similar claim language, and dependent claims 12, 16, 17, 19, and 20 (depending from claims 11 and 18) which have not been argued separately fall with claim 11.

Claim 15

Appellants contend that although Cui discloses "mappings between ontologies," "[t]here is no teaching or hint in Cui of mappings between **dependency chains** spanning distinct ontologies" (App. Br. 6-7).

We adopt the Examiner's finding that "[i]t appears that the [Appellants have] only provided mere conclusory statements without providing any evidence as to how the language of the claims differentiate the claims from the cited prior art" (Ans. 14).

A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim. *See* 37 C.F.R. § 41.37(c)(vii). Moreover, mere attorney arguments and conclusory statements that are unsupported by factual evidence are entitled to little probative value. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *see also In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984) and *Ex parte Belinne*, No. 2009-004693, 2009 WL 2477843 at *3-4 (BPAI Aug. 10, 2009) (informative). Appellants' arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a

patentable invention *without specifically pointing out how the language of the claims patentably distinguishes them from the reference.*

Accordingly, we sustain the Examiner's rejection of claim 15 under 35 U.S.C. § 103(a) over Cui in view of Ardoin and Bonatti.

Claims 13, 14, and 20

Appellants argue that claims 13, 14, and 20 are patentable over the cited prior art for the same reasons asserted with respect to claim 11 (App. Br. 7).

As noted *supra*, however, we find that Cui, Ardoin, and Bonatti *at least suggest* all the features of claim 11. We therefore affirm the Examiner's rejection of claims 13, 14, and 20 under 35 U.S.C. § 103 for the same reasons expressed with respect to parent claim 11, *supra*.

V. CONCLUSION AND DECISION

The Examiner's rejection of claims 11-20 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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